

Bowdoin College)	Departmental
Cumberland County)	Findings of Fact and Order
Brunswick, ME)	Air Emission License
A-76-71-L-R/M (SM))	

After review of the air emissions license renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Bowdoin College of Brunswick, Maine has applied to renew their air emission license permitting the operation of emission sources associated with their education facility. No new air emission equipment has been added and the two parts washers have been removed.

This renewal also includes a clarification revision to allow a 30 day rolling average period when determining sulfur content of the #2 fuel oil.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Main Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Boiler 1	45.1	322.1	#2 fuel oil, 0.35%
Boiler 2	29.3	209.3	#2 fuel oil, 0.35%
Boiler 3	48.6	347.1	#2 fuel oil, 0.35%

Smaller Boilers/Hot Water Boilers

<u>Boilers</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Administrative Building Boiler	1.2	8.3	#2 fuel, 0.35% S
Brunswick Apartments Boiler	4.2	29.9	#2 fuel, 0.35% S
Brunswick Apartments Boiler	4.2	29.9	#2 fuel, 0.35% S
Chamberlain Hall Boiler	1.6	17.0	Propane
Farley Field House Boiler	2.5	26.6	Propane
MacMillan House Boiler	1.3	9.6	#2 fuel, 0.35% S
Morrell Gym Boiler	1.3	13.5	Propane
Moulton Union Boiler	1.2	13.0	Propane
Pickard Field House Boiler	1.4	10.0	#2 fuel, 0.35% S
Smith Union Boiler	2.5	26.0	Propane
Squash Courts Boiler	1.8	19.1	Propane
Thorn Hall Boiler	3.2	33.7	Propane

Generators

<u>Location</u>	<u>Power Output (kW)</u>	<u>Max. Capacity (MMBtu/hr)</u>	<u>Firing Rate (gal/hr)</u>	<u>Fuel Type, % Sulfur</u>
Central Heating Plant	200	2.3	16.6	Diesel, 0.05%
Chamberlain Hall	200	2.3	16.6	Diesel, 0.05%
Druckenmiller Hall	150	1.7	12.5	Diesel, 0.05%
Hubbard Hall	60	0.7	4.98	Diesel, 0.05%
Memorial Hall	175	2.0	14.53	Diesel, 0.05%
Morrell Gym	50	0.6	4.15	Diesel, 0.05%
Moulton Union	75	0.9	9.08	Propane
Smith Union	45	0.5	5.45	Propane
Thorn Dining	400	4.6	33.22	Diesel, 0.05%
Whittier St. Warehouse	100	1.1	8.3	Diesel, 0.05%

Bowdoin College has several additional operations listed as insignificant or trivial activities pursuant to Chapter 115, Appendix B. Some of these activities include, but are not limited to: lawn and landscape activities, facility upkeep (including housekeeping, paving, painting, etc), lubricating oil storage tanks, ventilating and exhaust systems from laboratory hoods used by colleges, kilns used for art by colleges, VOC storage tanks (including petroleum storage tanks) with a capacity of 10,000 gallons or less, propane storage tanks 40,000 gallon capacity or less, indoor woodworking activities which do not emit fugitive particulate emissions

into the atmosphere, and cleaning and stripping activities using solutions with less than 1% VOC by weight.

C. Application Classification

The application for Bowdoin College does not include the licensing of increased emissions or the installation of new or modified equipment. Therefore, the license is considered to be a renewal of current licensed emission units only. With the fuel limits on the boilers and the operating hour restrictions on the emergency generators, Bowdoin College is licensed below the major source thresholds and is considered a synthetic minor. The renewal was processed under Chapter 115 of the Department's regulations.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

Before proceeding with the control requirements for each unit a general process description is provided to identify where the equipment fits into the process.

Process Description

Bowdoin College operates a heating plant, small boilers/hot water heaters, emergency generators, and miscellaneous maintenance activities to support the needs of the campus. Some of the smaller boilers are used to heat the buildings not supported by the Central Heating Plant and others are only used in the summer months when the Central Heating Plant is not operational. The emergency generators provide back-up power throughout the campus.

B. Central Heating Plant

1. Boilers 1 and 3

Boiler 1 is a B & W water-tube boiler with a rated heat input capacity of 45.1 MMBtu/hr and manufactured in 1963. Boiler 3 is also a B & W water-tube boiler and is rated at 48.6 MMBtu/hr and manufactured in 1973. The boilers fire #2 fuel oil with a maximum sulfur content of 0.35%. The boilers each have oxygen trim control to minimize emissions and improve efficiency. Bowdoin College shall use proper combustion and maintenance practices when in operation

These boilers are not subject to EPA's NSPS (New Source Performance Standards): 40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units since the Subpart is applicable to units which were constructed after June 9, 1989.

The emission limits for boilers 1 and 3 firing #2 fuel oil were based on the following BPT findings:

PM/PM₁₀ – 0.20 lb/MMBtu - Chapter 103 of the Department's regulations
SO₂ – combustion of 0.35% sulfur #2 fuel oil
NO_x – 0.3 lb/MMBtu: manufacturers data
CO – 5 lb/1000 gal: AP-42, Table 1.3-1 (dated 9/98)
VOC – 0.2 lb/1000 gal: AP-42, Table 1.3-3 (dated 9/98)
Opacity – Visible emissions shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

2. Boiler 2

Boiler 2, the newest unit, was manufactured and installed in 1996. It is a Cleaver-Brooks fire-tube boiler rated at 29.3 MMBtu/hr and fires #2 fuel oil with a maximum sulfur content of 0.35%. The boiler has oxygen trim control to minimize emissions and improve efficiency. Bowdoin College shall use proper combustion and maintenance practices when in operation. Boiler 2 is subject to EPA's NSPS: 40 CFR Part 60, Subpart Dc.

The emission limits for boiler 2 firing #2 fuel oil were based on the following BPT findings:

PM/PM₁₀ – 0.12 lb/MMBtu - Chapter 103 of the Department's regulations
SO₂ – combustion of 0.35% sulfur #2 fuel oil
NO_x – 0.3 lb/MMBtu: manufacturers data
CO – 5 lb/1000 gal: AP-42, Table 1.3-1 (dated 9/98)
VOC – 0.2 lb/1000 gal: AP-42, Table 1.3-3 (dated 9/98)

Opacity – Visible emissions shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

3. Specification Waste Oil

Bowdoin College may burn up to 500 gallons/year of specification waste oil in the boilers, based on a 12 month rolling total. The oil must meet the definition of specification waste oil as defined in the Department's regulations:

<u>Constituent/Property</u>	<u>Allowable Level</u>
Arsenic	5.0 ppm maximum
Cadmium	2.0 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Polychlorinated Biphenyls (PCBs)	10 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	100°F minimum

The results of an analysis of the specification waste oil generated on site was submitted as part of a previous license application. Bowdoin College shall keep the results of the representative waste oil test on site. If the equipment or operations that produce the on-site waste oil change, then a new representative sample shall be tested. The Department may also request additional testing in the future, if deemed necessary.

C. Small Boilers

Bowdoin College has twelve small boilers used to provide heat and hot water during the summer months and in buildings not supported by the steam plant. Five of these units fire #2 oil and seven fire propane. The boilers are rated from 1.2 MMBtu/hr to 4.2 MMBtu/hr.

1. The emission limits for the boilers firing #2 oil were based on the following :
PM/PM₁₀ – 0.12 lb/MMBtu, Chapter 103 of the Department's regulations
SO₂ – combustion of 0.35% sulfur #2 fuel oil
NO_x – 0.2 lb/MMBtu
CO – 5 lb/1000 gal: AP-42, Table 1.3-1 (dated 9/98)
VOC – 0.34 lb/1000 gal: AP-42, Table 1.3-3 (dated 9/98)
Opacity – Visible emissions shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

2. The BACT emission limits for the boilers firing propane were based on the following:
PM/PM₁₀ – 0.12 lb/MMBtu, Chapter 103 of the Department's regulations
SO₂ – 0.1(S)/1000 gal AP-42, Table 1.5-1 (dated 10/96)
NO_x – 14 lb/1000 gal: AP-42, Table 1.5-1 (dated 10/96)
CO – 1.9 lb/1000 gal: AP-42, Table 1.5-1 (dated 10/96)
VOC – 0.5 lb/1000 gal: AP-42, Table 1.5-1 (dated 10/96)
Opacity – Visible emissions shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

D. Fuel Limit

1. The boilers' combined fuel limit shall be 1,600,000 gal/year of #2 oil based on a 12 month rolling total, with a maximum fuel sulfur content not to exceed 0.35% by weight.
2. The calculations to determine the 0.35% by weight sulfur content may be based on a 30 day period as allowed for in 40 CFR Part 60, Subpart Dc.
3. Bowdoin College shall be limited to 250,000 gallons/year of propane, based on a 12 month rolling total.
4. Bowdoin College shall be limited to 500 gallons/year of specification waste oil, based on a 12 month rolling total.

E. Emergency Generators

The ten emergency generators are used for back-up power throughout the college campus. The size ranges from 0.5 MMBtu/hr to 4.6 MMBtu/hr. Two of the units burn propane and eight of the units fire diesel oil.

1. The BACT emission limits for the generators firing diesel oil and propane were based on the following (diesel factors were used for both types of units since there is little data available for propane internal combustion engines):

PM/PM₁₀ – 0.12 lb/MMBtu, Chapter 103 of the Department's regulations for the Thorn Dining generator (4.55 MMBtu/hr capacity) and 0.31 lb/MMBtu for smaller generators, AP-42, Table 3.3-1 (dated 10/96)
SO₂ – combustion of 0.05% sulfur diesel oil; propane use 0.001 lb/MMBtu
NO_x – 4.41 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)
CO – 0.95 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)

VOC – 0.36 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)

Opacity – Visible emissions shall not exceed 20% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period.

2. Each emergency generator shall be limited to 500 hours of operation a year, based on a 12 month rolling total. Bowdoin College shall keep records of the hours of operation for each unit. The generators shall be operated only for emergency use or for short periods to exercise the units and to keep them in operating order.

3. Definition of “Emergency”

Per Chapter 100 of the Department’s regulations, the definition of emergency for this license is the following:

“... any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology based emission limitation under the license, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.”

F. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20 percent, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour.

G. Annual Emissions

Bowdoin College shall be restricted to the following annual emissions, based on a 12 month rolling total (calculated from the annual fuel limits of 1,600,000 gallons #2 fuel oil and 250,000 gallons of propane; and 500 hours per year per generator):

**Total Licensed Annual Emission for the Facility
Tons/year**

(used to calculate the annual license fee)

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers (#2 oil)	22.4	22.4	39.48	33.6	4	0.27
Boilers (propane)	1.41	1.41	-	1.75	0.24	0.06
Generators	1.12	1.12	0.21	18.3	3.9	1.49

Total TPY	24.9	24.9	39.7	53.6	8.2	1.8
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III.AMBIENT AIR QUALITY ANALYSIS

According to the Chapter 115 of the Department's regulations, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

<u>Pollutant</u>	<u>Tons/Year</u>
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the above total facility emissions, Bowdoin College is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-76-71-L-R/M (SM) subject to the following conditions:

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned

- changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [MEDEP Chapter 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate

under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[MEDEP Chapter 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

- (16) **Boiler 1**
- A. Boiler 1 (rated at 45.1 MMBtu/hr) shall fire #2 fuel oil with a maximum sulfur content of 0.35% by weight, per condition (20). [MEDEP Chapter 115]
- B. Emissions from Boiler 1 shall not exceed the following [MEDEP Chapters 103 and 115]:

Boiler 1 Emission Limits

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.2	9.0
PM ₁₀	--	9.0
SO ₂	---	15.9
NO _x	0.3	13.5
CO	---	1.6
VOC	---	0.06

- C. Visible emissions from Boiler 1 shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(17) **Boiler 2**

- A. Boiler 2 (rated at 29.3 MMBtu/hr) shall fire #2 fuel oil with a maximum sulfur content of 0.35% by weight, per condition (20). [MEDEP Chapter 115]
- B. Emissions from Boiler 2 shall not exceed the following [MEDEP Chapters 103 and 115]:

Boiler 2 Emission Limits

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.12	3.5
PM ₁₀	--	3.5
SO ₂	---	10.3
NO _x	0.3	8.8
CO	---	1.0
VOC	---	0.04

- C. Bowdoin College shall comply with the notification and reporting requirements of Federal New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc including, but not limited to, fuel records and semi-annual reporting. [40 CFR Part 60, Subpart Dc]
- D. Visible emissions from Boiler 2 shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(18) **Boiler 3**

- A. Boiler 3 (rated at 48.6 MMBtu/hr) shall fire #2 fuel oil with a maximum sulfur content of 0.35% by weight, per condition (20). [MEDEP Chapter 115]
- B. Emissions from Boiler 3 shall not exceed the following [MEDEP Chapters 103 and 115]:

Boiler 3 Emission Limits

<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>lb/hr</u>
PM	0.2	9.7
PM ₁₀	--	9.7
SO ₂	---	17.1
NO _x	0.3	14.6
CO	---	1.7
VOC	---	0.07

- C. Visible emissions from Boiler 3 shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(19) Ancillary Boilers and Water Heaters

- A. The 12 small boilers/hot water heaters shall not exceed the following emission limits: [MEDEP Chapters 103 and 115]

<u>Unit</u>	<u>PM/PM₁₀</u>	<u>SO₂</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>
Admin. Building (1.2 MMBtu/hr) #2 fuel	0.14 lb/hr	0.4 lb/hr	0.23 lb/hr	0.04 lb/hr	0.003 lb/hr
Brunswick Apts (4.2 MMBtu/hr) #2 fuel	0.12 lb/MMBtu (for PM) 0.5 lb/hr	1.46 lb/hr	0.84 lb/hr	0.15 lb/hr	0.01 lb/hr
Brunswick Apts (4.2 MMBtu/hr) #2 fuel	0.12 lb/MMBtu (for PM) 0.5 lb/hr	1.46 lb/hr	0.84 lb/hr	0.15 lb/hr	0.01 lb/hr
Chamberlain Hall (1.6 MMBtu/hr) propane	0.19 lb/hr	negl.	0.24 lb/hr	0.03 lb/hr	0.008 lb/hr
Farley Field House (2.5 MMBtu/hr) propane	0.3 lb/hr	negl.	0.37 lb/hr	0.05 lb/hr	0.01 lb/hr
MacMillan House (1.3 MMBtu/hr) #2 fuel	0.16 lb/hr	0.47 lb/hr	0.27 lb/hr	0.05 lb/hr	0.003 lb/hr
Morrell Gym (1.3 MMBtu/hr) propane	0.15 lb/hr	negl.	0.19 lb/hr	0.03 lb/hr	0.007 lb/hr

Moulton Union (1.2 MMBtu/hr) propane	0.15 lb/hr	negl.	0.18 lb/hr	0.02 lb/hr	0.006 lb/hr
Pickard Field House (1.4 MMBtu/hr) #2 fuel	0.17 lb/hr	0.5 lb/hr	0.3 lb/hr	0.05 lb/hr	0.003 lb/hr
Smith Union (2.5 MMBtu/hr) propane	0.29 lb/hr	negl.	0.36 lb/hr	0.05 lb/hr	0.01 lb/hr
Squash Courts (1.8 MMBtu/hr) propane	0.22 lb/hr	negl.	0.27 lb/hr	0.04 lb/hr	0.009 lb/hr
Thorn Hall (3.2 MMBtu/hr) propane	0.12 lb/MMBtu (for PM) 0.38 lb/hr	negl.	0.47 lb/hr	0.06 lb/hr	0.02 lb/hr

- B. Visible emissions from the #2 fuel oil fired units shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]
- C. Visible emissions from the propane fired units shall not exceed an opacity of 10% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]

(20) Fuel Oil

- A. Bowdoin College shall be limited to 1,600,000 gallons/year of #2 fuel oil on a 12 month rolling total basis. The sulfur content of the fuel shall be limited to 0.35%. [MEDEP Chapter 115]
1. Fuel records shall be kept documenting the amount of fuel fired on a monthly and 12 month rolling total basis, and the percent sulfur of the fuel.
 2. Sulfur content of the fuel shall be based on a 30 day rolling average, as allowed for in 40 CFR Part 60, Subpart Dc. The calculation shall be the average sulfur of fuel deliveries received during any consecutive 30 day period.
- B. Bowdoin College shall be limited to 250,000 gallons/year of propane, based on a 12 month rolling total basis. Fuel records shall be kept documenting the amount of propane fired on a monthly and 12 month rolling total basis. [MEDEP Chapter 115]
- C. Bowdoin College may combust up to a total of 500 gallons/year of specification waste oil generated on site, based on a 12 month rolling total.

Bowdoin College shall maintain records of the amount of specification waste oil burned in the boilers and shall have, on-site, a copy of the results of a representative test sample of the waste oil. [MEDEP Chapter 115]

(21) Emergency Generators

- A. The ten licensed emergency generators shall each be limited to 500 hours per year, based on a 12 month rolling total. An hour meter on each unit shall be used to document generator operation. [MEDEP Chapter 115]
- B. The generators shall be operated only for emergency use or for short periods to exercise the units and to keep them in operating order. A log documenting the dates, times, and reason of operation for the emergency generators shall be kept. [MEDEP Chapter 115]
- C. The fuel oil fired in the diesel generators shall not exceed 0.05% sulfur by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel. [MEDEP Chapter 115]
- D. The generators shall not exceed the following emission limits, based on a 12 month rolling total [MEDEP Chapter 115]:

<u>Unit</u>	<u>PM or PM₁₀</u>	<u>SO₂</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>
Heating Plant Unit (2.3 MMBtu/hr) diesel, 0.05%	0.71 lb/hr	0.11 lb/hr	10.05 lb/hr	2.17 lb/hr	0.82 lb/hr
Chamberlain Hall (2.3 MMBtu/hr) diesel, 0.05%	0.71 lb/hr	0.11 lb/hr	10.05 lb/hr	2.17 lb/hr	0.82 lb/hr
Druckenmiller Hall (1.7 MMBtu/hr) diesel, 0.05%	0.53 lb/hr	0.09 lb/hr	7.54 lb/hr	1.62 lb/hr	0.62 lb/hr
Hubbard Hall (0.7 MMBtu/hr) diesel, 0.05%	0.21 lb/hr	0.03 lb/hr	3.00 lb/hr	0.65 lb/hr	0.24 lb/hr
Memorial Hall (2.0 MMBtu/hr) diesel, 0.05%	0.62 lb/hr	0.10 lb/hr	8.78 lb/hr	1.89 lb/hr	0.72 lb/hr
Morrell Gym (0.6 MMBtu/hr) diesel, 0.05%	0.18 lb/hr	0.03 lb/hr	2.51 lb/hr	0.54 lb/hr	0.21 lb/hr

Moulton Union (0.9 MMBtu/hr) propane	0.39 lb/hr	0.04 lb/hr	3.76 lb/hr	0.81 lb/hr	0.31 lb/hr
Smith Union (0.5 MMBtu/hr) propane	0.23 lb/hr	0.03 lb/hr	2.26 lb/hr	0.48 lb/hr	0.18 lb/hr
Thorn Dining (4.6 MMBtu/hr) diesel, 0.05%	(PM) 0.12 lb/MMBtu 0.55 lb/hr	0.23 lb/hr	20.07 lb/hr	4.32 lb/hr	1.64 lb/hr
Whittier St Warehouse (1.1 MMBtu/hr) diesel, 0.05%	0.35 lb/hr	0.06 lb/hr	5.03 lb/hr	1.08 lb/hr	0.41 lb/hr

E. Visible emissions from each generator stack shall not exceed 20% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [MEDEP Chapter 101]

(22) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20 percent, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour. [MEDEP Chapter 101]

(23) **Malfunction/Breakdown**

Bowdoin College shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605).

(24) **Annual Emission Statement**

In accordance with Chapter 137 of the Department's regulations, the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

- 1) A computer program and accompanying instructions supplied by the Department;
or
- 2) A written emission statement containing the information required in Chapter 137 of the Department's regulations.

Bowdoin College)	Departmental
Cumberland County)	Findings of Fact and Order
Brunswick, ME)	Air Emission License
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Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted as specified in Chapter 137.

[MEDEP Chapter 137]

(25) Payment of Annual License Fee

Bowdoin College shall pay the annual air emission license fee within 30 days of July 31 of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2004.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: January 7, 2004

Date of application acceptance: January 9, 2004

Date filed with the Board of Environmental Protection: _____

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.